

weather was generally pleasant. The freezing weather toward the end of the month caused some damage to potatoes that were in the ground. Farm work was well advanced and winter wheat and rye and clover were in good condition.—*W. M. Wilson.*

Wyoming.—The first week of the month was favorable for securing crops and for the completion of thrashing. The severe freeze of the

19th–20th destroyed some potatoes and other vegetables that had not been taken from the ground. While the month was cool and precipitation over much of the State above the normal, no severe storm occurred, and stock interests suffered but very little. The storms of the month gave good quantities of snow in the mountains of the State.—*W. S. Palmer.*

SPECIAL ARTICLES.

THE ZIEGLER RELIEF EXPEDITION.

By Dr. O. L. FASSIG. Dated Mount Weather Observatory, Bluemont, Va., October 25, 1905.

I left Baltimore on the morning of May 1, reaching New York about 3 p. m. of the same day. On May 3 I left New York on the White Star liner *Teutonic* in company with Mr. W. S. Champ, representative of the late William Ziegler and leader of the relief expedition. Mr. Champ's destination was a designated island of the group known as Franz Josef Land; my objective point was the northeast coast of Greenland, more particularly Bass Rock and Shannon Island, where stores had been laid down in 1903 for the use of an earlier exploring party in case any of the members should return by this route.

The steam sealer *Magdalena*, chartered by Mr. Champ for the Greenland journey, left Sandefjord, Norway, on June 21, 1905. I was the only representative of the late Mr. Ziegler to accompany the captain and crew of the *Magdalena*, and in fact the only passenger. The instructions were: (1) To proceed to Bass Rock and Shannon Island. (2) To bring back any members of the Ziegler Arctic Expedition of 1903 who might be found there. (3) To inspect the stores and storehouses found there. After leaving Sandefjord, Norway, we proceeded directly to Bass Rock and Shannon Island without making any intermediate ports. We reached the floating ice on July 10, in latitude about 72° north and 5° west of Greenwich. After considerable difficulty we forced our way through the ice and fog to the coast of Greenland, reaching Bass Rock (lat. 74° 46' N., long. 18° 12' W.) on the morning of July 21, and Shannon Island (about twenty miles northward) on the afternoon of the same day. After convincing ourselves that no members of the Ziegler party had been on these islands, and finding the stores and storehouses in good condition, we started on our return journey in the evening of the same day (July 21).

Returning by a southeasterly course we passed beyond the influence of the ice in the neighborhood of Jan Mayen Islands, very near the point at which we first met the floating ice. During the entire period, from July 1 to 27, foggy weather prevailed, and on all but two days of this period the fog was dense most of the day. This impeded our progress and added greatly to the difficulties and dangers of our journey, especially during the two weeks or more of our movements in the ice fields.

We reached Miofjord, Iceland, on August 1, where I left the *Magdalena* and took passage in the Danish steamer *Kong Inge* for Leith, Scotland, arriving at the latter port on the 7th of August. On the 10th of August I received a cable from Mr. Champ announcing that he had returned to Norway with practically the entire Ziegler party. On August 12 I left London and Southampton, taking passage on the American liner *Philadelphia* for New York, arriving on the 19th. I left New York on August 21 arriving in Baltimore on the evening of the same day.

A more detailed narrative of my journey is being prepared for publication by Mr. Champ.

STANDING CLOUDS AMONG THE NORTH CAROLINA MOUNTAINS.

By FRANK W. PROCTOR. Dated Fairhaven, Mass., November 8, 1905.

In Science, May 1, 1903, Prof. R. DeC. Ward, speaking of an account of a standing cloud observed in the mountainous region of North Carolina by Professor Davis (Bulletin of the

Geographic Society of Philadelphia, Pa., III, No 3, 1903), says: "This is the first mention of the occurrence of helm clouds in this section."

If this means single standing clouds, it is probable that they have not been reported before, because they are seen so often. At Waynesville, N. C., they are of common occurrence. This village is surrounded on three sides by high and steep mountains, and, therefore, the topography is very favorable for the formation of dynamic clouds. The following account of an interesting standing cloud showing two wave crests, observed at Waynesville by the writer, is taken from a memorandum made at the time:

December 17, 1897.—Barometer high, wind southwest. Large, dense, standing cloud over Caney Fork Bald, and the Richland Balsam Range, cumulus form, carried down on lee side a short distance, and evaporating at its leeward edge as fast as it forms to windward. A short distance to leeward, perhaps one-fourth to one-half a mile, approximately at the same level, and separated from the main cloud by an entirely clear space, is a detached, standing, fracto-cumulus of good size, forming to windward and evaporating to leeward like the primary cloud. The sky over the valley is otherwise clear.

This mountain range forms the head of the valley, and runs athwart the direction of the wind that is blowing down the valley. Just across the narrow Balsam Gap, another ridge of mountains runs at right angles, forming one side of the valley. The wind meets this range at a small angle with the axis of the ridge, and the small component of motion up the slope forms a dynamic cloud, which driven by the main component, drifts along the summit of the ridge in a continuous, thin, strato-cumulus sheet, about eight miles long, and finally evaporates and disappears as the ridge descends to the valley. There are no other clouds in sight.

This long cloud sheet is at substantially the same level as the double standing cloud over the Richland Range, and the portion abreast the observer, shows by its motion that the wind at the level of the standing cloud must be blowing twenty miles an hour, probably more, yet that cloud is stationary, and so is the detached, secondary, standing cloud directly to leeward.

It may be added to the foregoing quotation, that on the sides of the mountains facing the valley, what might be called dynamic fog, is frequent. That is to say, after rains, or when there is much dampness, the wind blowing up these mountain sides, forms fog sheets on the windward slopes, when no fog is to be seen in any other direction.

A narrow, deep, and steep ravine between the main ridge last mentioned above, and a lateral spur, frequently has a fog cloud at its head, like that described by Mr. Eddy, in the MONTHLY WEATHER REVIEW, for December, 1904, and which he attributed to mixture. Here it is evidently of dynamic origin.

On two occasions the writer observed cumulus clouds crossing the valley, which were rotating on horizontal axes, similar to those mentioned by Mr. Eddy in the same article. The rotatory motion was supposed to be caused by the curling of the wind over the summit of the mountain ridge whose axis lay at right-angles to the direction of the wind.

SOUNDING AND PILOT BALLOONS OVER THE OCEAN.

By H. S. H., the Prince of Monaco.

[Translated from Comptes Rendus de l'Académie des Sciences, Tome 141, No. 11, September 11, 1905.]

Following the experiments made at Monaco and in the region of the trades for the exploration of the upper atmosphere by means of kites, I undertook, at the suggestion of Professor Hergesell, of Strassburg, to apply to these researches the method of sounding balloons already employed with great success on land. These experiments took place on